Claims

1. Method for controlling an actuator, especially of piezoelectric actuator, featuring the following steps:
- the actuator is charged or discharged in at least three stages, each with a predefined duration (T1, T2, T3) by a current (I),
- during the first period (T1) the maximum amplitude (Î$_n$) of the current (I) is increased from a predefined minimum (Î$_{minT1}$) to a predefined first maximum (Î$_{maxT1}$),
- during the second period (T2) the maximum amplitude (Î$_n$) of the current (I) is kept approximately constant, and
- during the third period (T3) the maximum amplitude (Î$_n$) of the current (I) is lowered from a further predefined maximum (Î$_{maxT3}$) to a further predefined minimum (Î$_{minT3}$).

2. Method as claimed in claim 1, characterized in that the first maximum (Î$_{maxT1}$) is selected in accordance with an amount of charge (Q) to be fed to the actuator (p).

3. Method as claimed in one of the claims 1 or 2, characterized in that the second period (T2) is selected in accordance with an amount of charge (Q) to be fed to the actuator (p).

4. Method as claimed in one of the claims 2 or 3, characterized in that the first maximum (Î$_{maxT1}$) and/ or the second period (T2) are read out depending on a predefined length change (Δd) from a characteristic data field.

5. Method as claimed in one of the previous claims, characterized in that the maximum amplitudes (Î$_n$) lie on an envelope curve (k) which, over the three predefined periods (T1, T2, T3) has approximately the shape of a trapeze.

6. Method in accordance with one of the previous claims, characterized in that the current (I) is intermittent.

7. Method in accordance with claim 6, characterized in that the current (I) is made up of a series of pulses (PU), with the maximum amplitude (Î) corresponding in each case to the maximum current of the relevant pulse (PU).

8. Method in accordance with claim 7, characterized in that the pulses (PU) are triangular in shape.

9. Method as claimed in one of the claims 3 to 4, characterized in that amplitudes (În) of the current (I) increase without pausing after a predefined minimum has been reached.

10. Method as claimed in one of the previous claims, characterized in that the current (I) is provided by a final stage (E) depending on a control voltage (UST), with the control voltage (UST) being provided by a digital-analog converter (DA1).

11. Device for controlling an actuator, especially a piezoelectric actuator, which features:

- a final stage (E), which features a control input (UST), and
- a control unit (ST), which provides a control voltage (UST) to operate the final stage (E), with the control signal (UST) rising during a first predefined period (T1) from a predefined minimum (ÎminT1) to a predefined maximum (ÎmaxT1), remaining constant during a second predefined period (T2) and falling during a third predefined period (T3) from a predefined maximum (ÎmaxT3) to a predefined final value (ÎminT3).

12. Device as claimed in claim 1, characterized in that the device features a digital-analog converter (DA1) which provides the control voltage (UST).